

**Sri Krishna Dutt Academy,
Vrindavan Yojna, Raibareilly Road,
Lucknow (U.P.)**
(An Associated college of University of Lucknow)
SESSION: 2019-20 (I SEM.)

1. Name of the Add on Course: Certificate Course on "Ecology and Waste Management"

2. Course Coordinator (with Email and Mobile):

3. Duration of Course (in hours): 30 Hours

4. Objectives of the Certificate Course:

- This course intends to acquaint the students with the new discipline of ecological and environmental history.
- It also intends to familiarize the students with various ecological environment conservation policies of post-independence period.
- It also intends to bring the students to the understand the various techniques of hazardous waste management.
- It also intends to aware students about the major environmental problems around locality and the initiative taken by the authority to mitigate those problems.

8. Target Group: B.Sc, BCom., BEd.

9. Total Marks:

Theory	40
Practical	30
Presentation	10
Assignment	10
Class attendance	10
Total marks	100

10. Detailed syllabus of the Course:

Unit I: Ecosystems (6 Hrs.)

Definition and concept of Ecosystem, Structure of ecosystem (biotic and abiotic components); Functions of Ecosystem: Physical (energy flow), Biological (food chains, food web, ecological succession), and Biogeochemical (nutrient cycling) processes. Concepts of productivity, ecological pyramids.

Unit II: Natural Resources (8 Hrs)

Land resources, medicinal plants, and forest-based industries and livelihoods, biodiversity, Water resources, Energy resources: Renewable and non-renewable energy sources; Use of alternate energy sources; Agro-residues as a biomass energy source

Unit III: Introduction to waste Problem of Wastes (8 Hrs)

Types of Solid Waste, Categories of solid waste, Effects of Excess Waste Generation, Waste Characterization, Solid Waste Reduction, Waste reduction strategies - How to Start a Waste Reduction Program Guideline, Economic benefits of Waste Reduction, Municipal and Hazardous Waste management techniques.

Unit IV: Waste Reduction Strategies (8 Hrs)

Waste Analysis, People's Responsibility of Waste Management Responsibility of Waste Management, Waste Reduction Towards Zero Waste Sustainable Living, Waste Reduction at Business (Producer) Level, Waste Reduction at Individual Level: Zero Waste Living, Waste Reduction at Community Level, Collection of information on waste reduction strategies from localities, Invited lecture/training by local expert, Assignments, Group discussion, Quiz etc.